JOHN H. GLENN RESEARCH CENTER
ENVIRONMENTAL MANAGEMENT OFFICE
CHEMICAL MANAGEMENT TEAM

HAZCOM PROGRAM

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INTRODUCTION

OSHA HAZARD COMMUNICATION STANDARD

The Occupational Safety and Health Administration (OSHA) codified the Hazard Communication Standard in Title 29, Code of Federal Regulations (CFR), Part 1910.1200. This final rule applies to workplaces where employees are exposed to hazardous chemicals. On July 25, 1986, OSHA ruled that, pursuant to Executive Order 12196, all Federal agency heads were required to comply, by May 23, 1988, with the OSHA Hazard Communication Standard.

The Hazard Communication Standard (HAZCOM) is based on a simple concept - that employees have both a need and a right to know the hazards and identities of the chemicals they are exposed to when working. They also need to know what protective measures are available to prevent adverse effects from occurring. The HAZCOM is designed to provide employees with the information they need.

The HAZCOM also defines the need for each covered facility to develop a Written Hazard Communication Program (29 CFR 1910.1200(e)). This document, the NASA Glenn Research Center HAZCOM Program, fulfills the requirements for a written program specified in the OSHA standard.

NASA GLENN RESEARCH CENTER HAZARD COMMUNICATION POLICY

The Glenn Research Center Environmental Programs Manual, Chapter 23, outlines the Center's policy about Hazard Communication. The definition of the authorities and responsibilities are in a manner that allows flexibility to adjust the program to the specific needs of each work area.

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Scope and application

This document establishes the NASA Glenn Research Center (GRC) written hazard communication program. The GRC HAZCOM Program applies to any chemical which is known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency.

GRC HAZCOM Program applies to laboratories only as follows:

- GRC shall ensure that labels on incoming containers of hazardous chemicals are not removed or defaced;
- GRC shall maintain any material safety data sheets that are received with incoming shipments of hazardous chemicals, and ensure that they are readily accessible during each workshift to laboratory employees when they are in their work areas;
- GRC shall ensure that laboratory employees are provided information and training; and,
- Laboratory employers that ship hazardous chemicals are considered to be either a chemical manufacturer or a distributor under HAZCOM, and must ensure that any containers of hazardous chemicals leaving the laboratory are labeled, and that a material safety data sheet is provided to distributors and other employers.

In work operations where employees only handle chemicals in sealed containers which are not opened under normal conditions of use (such as are found in marine cargo handling, warehousing, or retail sales), this section applies to these operations only as follows:

- GRC shall ensure that labels on incoming containers of hazardous chemicals are not removed or defaced;
- GRC shall maintain copies of any material safety data sheets that are received with incoming shipments of the sealed containers of hazardous chemicals, shall obtain a material safety data sheet as soon as possible for sealed containers of hazardous chemicals received without a material safety data sheet if an employee requests the

material safety data sheet, and shall ensure that the material safety data sheets are readily accessible during each work shift to employees when they are in their work area(s); and,

- GRC shall ensure that employees are provided with information and training.

The GRC HAZCOM Program **does not** apply to:

- Any hazardous waste as such term is defined by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6901 et seq.), when subject to regulations issued under that Act by the Environmental Protection Agency;

- Any hazardous substance as such term is defined by the Comprehensive Environmental Response, Compensation and Liability ACT (CERCLA) (42 U.S.C. 9601 et seq.) when the hazardous substance is the focus of remedial or removal action being conducted under CERCLA in accordance with the Environmental Protection Agency regulations.

- Tobacco or tobacco products;

- Wood or wood products, including lumber which will not be processed, where the chemical manufacturer or importer can establish that the only hazard they pose to employees is the potential for flammability or combustibility (wood or wood products which have been treated with a hazardous chemical covered by this standard, and wood which may be subsequently sawed or cut, generating dust, are not exempted);

- Articles (as that term is defined in paragraph (c) of this section);

- Food or alcoholic beverages which are sold, used, or prepared in a retail establishment (such as a grocery store, restaurant, or drinking place), and foods intended for personal consumption by employees while in the workplace;

- Any drug, as that term is defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.), when it is in solid, final form for direct administration to the patient (e.g., tablets or pills); drugs which are packaged by the chemical manufacturer for sale to consumers in a retail establishment (e.g., over-the-counter drugs); and drugs intended for personal consumption by employees while in the workplace (e.g., first aid supplies);

- Cosmetics which are packaged for sale to consumers in a retail establishment, and cosmetics intended for personal consumption by employees while in the workplace;

- Any consumer product or hazardous substance, as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) respectively, where the employer can show that it is used in the workplace for the purpose intended by the chemical manufacturer or importer of the product, and the use results in a duration and frequency of exposure which is not greater than the range of exposures that could reasonably be experienced by consumers when used for the purpose intended;

- Nuisance particulates where the chemical manufacturer or importer can establish that they do not pose any physical or health hazard covered under this section;

- Ionizing and nonionizing radiation; and,

- Biological hazards.

GRC has developed, implemented, and maintained this written hazard communication program which:

1. Describing how GRC manages material safety data sheets (MSDSs) (Chapter 1.0);
2. Providing a list of hazardous chemicals (Chapter 2.0);
3. Describing how GRC manages labels and other forms of warning (Chapter 3.0);

4. Describing how GRC manages employee information and training (Chapter 4.0); and
5. Describing how GRC complies with the Multi-employer worksite requirements (Chapter 5).

Other requirements for a written hazard communication program are described in other sources. These details can be found in the following areas:

1. Methods for informing employees of the hazards of non-routine tasks - Glenn Safety Manual Chapters on Safety Permits (1A), Confined Space Entry (16), Lockout/Tagout (9), and others as appropriate and
2. Requirements for Multi-employer workplaces - all on-site support service contractors tenant organizations are expected to follow all GRC health, safety and environmental policies, including HAZCOM. Employees of on-site support service contractors and tenant organizations are offered access to all of the same information as the NASA civil servants. This includes access to MSDS', safe work practices/precautionary measures and information about the GRC labeling system.

The GRC HAZCOM Program is a regular, continuing effort, not merely a standby or short-term activity. All GRC civil service employees at Lewis Field and Plum Brook Station, along with tenant organization employees and on-site support service contract employees are expected to follow its recommendations. This Program is designed to meet the requirements of 29 CFR 1910.1200(e): Written hazard communication program. The GRC HAZCOM Program Lead will review this program annually to ensure that the procedures continue to meet the needs of the Center and comply with current regulations.

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Change Record

Rev.	Effective Date	Description
D	8/22/03	Revision
E	11/22/03	Revision
F	2/1/05	Revision
G	06/2006	Revision

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CHAPTER 1 - MATERIAL SAFETY DATA SHEET PLAN

Purpose
The purpose of the Material Safety Data Sheet (MSDS) Plan is to define the methods used at the Glenn Research Center (GRC) to comply with the OSHA MSDS requirements in 29 CFR 1910.1200(g).

Scope
The scope of the Material Safety Data Sheet (MSDS) plan is for all hazardous chemicals used by employees at GRC including civil servants, tenants and contractors at both Lewis Field and the Plum Brook Station.

MSDS Program
This MSDS Plan is established to define how GRC manages MSDSs and how the information on the MSDS is communicated to the employees. The MSDS program shall comply with all aspects of the Hazard Communication Standard as it relates to the Material Safety Data Sheets.

Chemical manufacturers and importers are required to obtain or develop a material safety data sheet for each hazardous chemical they produce or import. Distributors are responsible for providing GRC a copy of the MSDSs. GRC must have an MSDS for each hazardous chemical that is used on site. GRC may rely on the information received from our suppliers.

The following information describes how GRC manages this requirement.

Material Safety Data Sheets

There is no specified format for the MSDS under the standard, although there are specific information requirements. OSHA has developed a non-mandatory format, OSHA Form 174, which may be used by chemical manufacturers and importers to comply with the rule.

The MSDS must be in English and have the following information:

1. The identity used on the container label;
    1. if the hazardous chemical is a single substance, its chemical and common name
    2. if the hazardous chemical is a mixture which has been tested as a whole to determine its hazards, the chemical and common name(s) of the ingredients which contribute to these known hazards, and the common name(s) of the mixture itself; or if the hazardous chemical is a mixture which has not been tested as a whole
        3. the chemical and common name(s) of all ingredients which have been determined to be health hazards, and which comprise 1% or greater of the composition, except that chemicals identified as carcinogens under paragraph (d) of this section shall be listed if the concentrations are 0.1% or greater; and,
        4. Chemical and common name(s) of all ingredients which have been determined to be health hazards, and which comprise less than 1% (0.1% for carcinogens) of the mixture, if there is evidence that the ingredient(s) could be released from the mixture in concentrations which would exceed an established OSHA permissible exposure limit or ACGIH Threshold Limit Value, or could present a health risk to employees; and,
        5. The chemical and common name(s) of all ingredients which have been determined to present a physical hazard when present in the mixture;
        - Physical and chemical characteristics of the hazardous chemical (such as vapor pressure, flash point);
2. Physical hazards of the hazardous chemical, including the potential for fire, explosion, and reactivity;
3. Health hazards of the hazardous chemical, including signs and symptoms of exposure, and any medical conditions which are generally recognized as being aggravated by exposure to the chemical;
4. Primary route(s) of entry (exposure);
5. OSHA permissible exposure limit, ACGIH Threshold Limit Value, and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the material safety data sheet, where available;

6. Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Annual Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest editions), or by OSHA;
7. Any generally applicable precautions for safe handling and use which are known to the chemical manufacturer, importer or employer preparing the material safety data sheet, including appropriate hygienic practices, protective measures during repair and maintenance of contaminated equipment, and procedures for clean-up of spills and leaks;
8. Any generally applicable control measures which are known to the chemical manufacturer, importer or employer preparing the material safety data sheet, such as appropriate engineering controls, work practices, or personal protective equipment;
9. Emergency and first aid procedures;
10. Date of preparation of the material safety data sheet or the last change to it; and,
11. Name, address and telephone number of the chemical manufacturer, importer, employer or other responsible party preparing or distributing the material safety data sheet, who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

The role of MSDSs under HAZCOM is to provide detailed information on each hazardous chemical, including its potential hazardous effects, its physical and chemical characteristics, and recommendations for appropriate protective measures. MSDSs are readily accessible to employees when they are in their work areas during their work shifts.

Obtaining Material Safety Data Sheets (MSDSs)

MSDSs are obtained from the supplier at the time a chemical is ordered. GRC Procurement obtains MSDSs for orders placed through the SAP purchasing system. Bankcard users are required to obtain MSDSs for all chemicals ordered with their bankcard. The MSDS is sent to Chemical Management for the central file. Chemical Management reviews each MSDS for completeness and conformance to OSHA's requirements in 29 CFR 1910.1200(g)(2).

MSDSs that pass this scrutiny are then scanned into an electronic database (http://msds.grc.nasa.gov/) for Center-wide access.

GRC personnel may request MSDSs that are not on the MSDS web site through the GRC Intranet (URL address: http://forms.grc.nasa.gov/Forms/PublicUser/index.cfm, Material Safety Data Sheet (MSDS) Request (NASA C-377 form)). All requests for MSDSs are documented using date received and date delivered.

MSDS Binders

MSDS binders will be maintained if electronic access to http://msds.grc.nasa.gov/ is not available. In those specific instances, Chemical Management will assist in creating and maintaining a current MSDS binder. All other work areas are to use the electronic database (http://msds.grc.nasa.gov/) for access to MSDS information.

GRC Generated MSDSs

All hazardous chemicals that are generated by employees at the Center and which leave the center, are transferred to other people at the Center or are transferred between Lewis Field and Plum Brook Station must have an MSDS. If no MSDS exists for the material, one must be written before the material is allowed to change locations.

Form NASA-C10007 (available at http://forms.grc.nasa.gov/Forms/PublicUser/index.cfm) is to be initiated by the creator of the hazardous chemical, listing as much information about the substance as possible. This information is sent to Chemical Management (MS 6-4 or electronically) along with a copy of the MSDS for each raw material.

A complete hazard determination, as required by 29 CFR 1910.1200(d), is then conducted by Chemical Management and other Safety, Health and Environmental Division (SHED) specialties as needed. A NASA MSDS number will be assigned to the completed MSDS. No MSDS without a NASA MSDS number is valid. The approved MSDS will then be returned to the originator with a paper copy is kept in the Chemical Management central file. The MSDS will also be scanned into the electronic database.

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All NASA generated MSDSs will be updated as soon as possible after new information becomes available on applicable chemicals.

MSDS Maintenance

Material Safety Data Sheets Storage

The QSE maintains the central MSDS file for all hazardous chemicals at GRC. All GRC MSDSs are stored in a computer database. The database stores the images of the MSDS. This database is backed up nightly on the SHED server and master CD/DVD copies are also burned quarterly for extra back up safety.

The master MSDSs file cabinets are kept in basement of Building 6. The cabinets contain over 14,000 MSDSs. QSE maintains the MSDS master files.

Updating MSDSs

MSDSs are updated whenever a new MSDS is received. The MSDSs on file are reviewed by QSE every three years to ensure that each MSDS is the most current available.

Responsibilities

Environmental Management Branch

- Obtain and maintain the central MSDS files.
- Scan and maintain all MSDSs in the GRC database.
- Assist the supervisors or chemical users with updated MSDSs for their binders.
- Train employees and supervisors on MSDSs and the MSDS program.

Supervisors

- Ensure that, where available, employees have access to the GRC MSDSs web site during all work shifts.
- Ensure that employees have read and understood the information on the MSDS for all hazardous chemicals that the employee will encounter at the work site.
- Ensure that any MSDS binders in the work area are up to date.
- Ensure that copies of all MSDSs are sent to the CMT.

Chemical Users

- Know how to access the MSDSs on line.
- If access to online MSDSs is not available, know where MSDSs are kept.
- Read MSDSs and understand the information needed to work with the hazardous chemicals safely.

Monitoring Program

The MSDS plan shall be reviewed annually. Client MSDS binders shall be inspected on a random basis for completeness and accuracy. The MSDS central files shall be kept current. The GRC MSDS online database shall be kept current.

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CHAPTER 2 - CHEMICAL INVENTORY PLAN

Purpose
The purpose of the chemical inventory plan is to establish how hazardous chemicals will be tracked and managed at the NASA Glenn Research Center (GRC). This plan applies to ensure the accuracy of the Chemical Inventory Management System (CIMS), which supports the Hazard Communication Program at GRC. The Safety & Mission Assurance Directorate (SMAD) Annual Operating Agreement (AOA) supports the commitment of GRC to have an accurate inventory by an agreement with NASA Headquarters.

Scope
The scope of the Chemical Inventory Plan is applicable for all hazardous chemicals used by employees at GRC including civil servants, tenants and contractors at both Lewis Field and the Plum Brook Station.

Inventory Requirements

Receipt of Chemicals
Chemicals are shipped to the users from two locations: store stock supply and chemical receiving. Both operations are a part of the Logistics and Technical Information Division of GRC. Chemicals that are shipped to the end user from store stock are bar-coded before shipment and a copy of the barcode with the chemical name, requestor name, and destination are sent to the Environmental Management Branch (QSE) for entry into the database. Chemicals sent from receiving are also bar coded. Receiving will send a copy of the bar code with the Order for Supplies document to QSE for database entry.

Personnel Training and Certification
Individuals performing field audits at GRC are required to have, at minimum, General Hazard Communication Training, Personal Protective Equipment (PPE) Training, and General Laboratory Standard Training. The Hazard Communication Officer based on the conditions of the environment being inventoried may recommend additional training. Additional training may include Respirator Training, Hearing Conservation Training and Hazardous Waste Operations and Emergency Response Training.

Safety Precautions
Hazardous areas at GRC require an individual to wear proper PPE such as protective gloves, safety goggles, safety shoes, hard hats, earplugs and respiratory protective equipment while working in the area. QSE will determine what PPE is required for each work area that is being inventoried. All individuals involved in the process of inventory will comply with the specifications as required in the NASA GRC buddy system.

Tools, Equipment and Materials
The following tools, equipment and materials are required to perform field audits:
Handspring Visor Prism Personal Data Assistant (PDA);
Environmental Management Branch, Chemical Management System;
Federal Barcode labels;
Pager or equivalent form of communication;
PPE (as required for work area); and
Building floor plans.

Instructions
Instructions on the proper procedures of the Chemical Inventory Management System are documented in the Chemical Management System's Manual that is maintained by QSE.

Method and Frequency
Annually, QSE performs a statistical audit to keep track of the inventory accuracy. QSE scans random buildings/rooms and takes the percentage of containers that already exist in the CIMS and compares it to the new container list.

Web Access

To maintain and manage the Chemical Inventory for the Center, a form NASA form C-3032 is provided on the http://forms.grc.nasa.gov/Forms/PublicUser/index.cfm website for the owners/users of chemicals to inform QSE of any containers disposed, transferred or moved at GRC.

QSE also structures a system to minimize the amount of containers stored at the Center. The Chemical Exchange Program is a way for researchers to get rid of any unused chemicals. Researchers that are in need of chemicals can obtain them through the Chemical Exchange Program. To request or offer a chemical to the Chemical Exchange Program, contact QSE.

Responsibilities

Environmental Management Branch (QSE)

- Develop and maintain the chemical inventory system for tracking and identifying chemicals.
- Develop and maintain the chemical exchange program
- Waste Management program provides CMT with information on all expired containers of hazardous chemicals scheduled for disposal

Supervisor

- Ensure that employees are aware and follow the chemical inventory procedures.
- Ensure that QSE is notified of any changes in inventory due to disposal or transfer to another location.

Employee

- Provide chemical information to QSE for tracking.
- Notify CMT of any and all changes to the inventory due to disposal or transfer.

Logistic and Technical Information Division

- Barcode all hazardous chemicals before shipment to user.
- Provide QSE with information on bar-coded chemicals and name and location of users.

Monitoring Program

QSE shall monitor the effectiveness of the chemical inventory program and determine the accuracy of the inventory.

Review Process

This Chemical Inventory Plan shall be reviewed by QSE annually.

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CHAPTER 3 - CHEMICAL LABELING PLAN

Purpose
The purpose of this Chemical Labeling Plan is to ensure that containers of hazardous chemicals are labeled, tagged, or marked with the identity of the material and appropriate hazard warnings.

Scope
This plan applies to all on-site work locations at both Lewis Field and Plum Brook Station.

Labeling Program

GRC ensures that each container of hazardous chemicals in the workplace is labeled, tagged or marked with the following information:

- Identity of the hazardous chemical(s) contained therein; and,
- Appropriate hazard warnings, or alternatively, words, pictures, symbols, or combination thereof, which provide at least general information regarding the hazards of the chemicals, and which, in conjunction with the other information immediately available to employees under the hazard communication program, will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.

GRC uses signs, placards, process sheets, batch tickets, operating procedures, or other such written materials in lieu of affixing labels to individual stationary process containers. The written materials are readily accessible to the employees in their work area throughout each work shift.

GRC is not required to label portable containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer.
Each chemical user is to ensure that labels on incoming containers of hazardous chemicals are not removed or defaced. Any employee handling hazardous chemicals shall notify the Environmental Management Branch (QSE) when incoming containers require labeling.

Each laboratory worker is to ensure that a proper label is placed on all chemicals that the laboratory worker makes or stores. All personnel handling hazardous chemicals shall request appropriate labels from the QSE for use on incoming chemicals, single use or transfer containers if the chemicals are not properly labeled.

If the chemical substance is produced for another user outside of the laboratory, the laboratory employee shall comply with the Hazard Communication Standard (29 CFR 1910.1200) including the labeling requirements. An employee preparing samples for use by another laboratory shall request appropriate labels and MSDSs from the QSE and apply the labels prior to shipment.

GRC ensures that labels or other forms of warning are legible, in English, and prominently displayed on the container, or readily available in the work area throughout each work shift.

HAZCOM Labeling Criteria
Labels must be legible and specify the proper chemical or trade name and details concerning the hazard, such as: Flammability (Red Color Bar or Diamond); Health (Blue Color Bar or Diamond) and Reactivity (Yellow Color Bar or Diamond) as defined by the applicable Material Safety Data Sheet (MSDS). In addition, Target Organ Hazards (if available) along with the appropriate personnel protective pictograms must be present.

Exemptions to the above labeling include prepackaged manufacturers' containers authorized for shipment by the DOT, chemicals that contain mixtures, which may use generic labels, and Hazardous Waste containers governed by the Resource Conservation and Recovery Act (RCRA) labeling standards. The HAZCOM Program Lead will determine other exemptions.

All hazardous materials and chemicals to be used in the laboratory shall be properly labeled. Containers applicable to this plan are anticipated to comprise either single use, transfer containers, manufacturers' containers with damaged or removed labels, or Aboveground or Underground Storage Tanks (AST's/UST's).

Chemical Receiving
Chemical manufacturers, importers, and distributors of hazardous chemicals are all required to provide the appropriate labels and material safety data sheets to the employers to which they ship the chemicals. The information is to be provided automatically. Every container of hazardous chemicals received must be labeled, tagged, or marked with the required information. Suppliers must also send a properly completed material safety data sheet (MSDS) at the time of the first shipment of the chemical, and with the next shipment after the MSDS is updated with new and significant information about the hazards.

GRC is not required to affix new labels to comply with this section if existing labels already convey the required information.

Single Use/Transfer Container Labeling
HAZCOM warning labels shall be affixed to any bag, bottle, box, can, cylinder, drum, storage tank, or like container of hazardous chemicals. Labeling will specify all pertinent data as specified in the HAZCOM Labeling Criteria above.

Exemptions to container labeling will be those containers which due to physical limitation cannot have all of the aforementioned hazard warnings, such as small chemical samples. Exempted containers must, however, be identified by some appropriate means; i.e., by chemical name as a minimum. All hazard data or appropriate MSDS must accompany the sample when shipped to another location.

Aboveground/Underground Storage Tank Labeling
All AST's/UST's containing hazardous chemicals will be labeled to meet HAZCOM requirements. AST's must have the National Fire Protection Association (NFPA) fire diamond displayed in a location on the tank clearly visible to employees and emergency responders, the proper chemical name, and a 7"x10" HAZCOM label (minimum size) for operating personnel describing the hazards and personnel protective equipment.

UST's will also be similarly labeled, except a metal sign, displayed in a location at or near the tank, shall be used to communicate all the pertinent hazard warnings. Tanks not affected by this plan include nonflammable gases or liquids, except cryogenic liquids, and nontoxic gases or liquids.

Labeling Review Process
The HAZCOM Program Lead shall review each label created by Environmental Management Branch for completeness and accuracy. Environmental Management Branch shall maintain review forms.

Responsibilities:

Environmental Management Branch
- Ensure that all hazardous chemical container labels are in compliance with this plan
- Perform an initial assessment of the work areas to determine work area labeling requirements.
- Perform audits to ensure labels for hazardous chemicals are in compliance.
- Supply labels for the containers.

Supervisors and Employees
- Ensure that hazardous chemicals are properly labeled.
- Notify QSE when labels are needed.

Monitoring Program
The QSE will perform periodic audits to ensure compliance with this plan. The plan may be modified or updated based on the results of these audits.

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CHAPTER 4 - HAZCOM TRAINING PLAN

Purpose
The purpose of the Hazard Communication (HAZCOM) training plan is to define the methods and availability for training for the Glenn Research Center (GRC) employees.

Scope
The scope of the HAZCOM Training plan is for all employees at GRC including civil servants, tenants, and contractors at Lewis Field and the Plum Brook Station.

Training Requirements

General
The Environmental Management Branch (QSE) provides all GRC civil servant personnel with general HAZCOM training on their initial assignment. General training consists of the HAZCOM standard, the contents of and how to read a Material Safety Data Sheet (MSDS), how to read labels, the GRC written policy and program, chemical inventory, and the people to contact for any applicable information regarding the standard. Each employee with routine chemical exposures shall refresh general HAZCOM training at least once every three years. Office personnel with or any personnel only isolated exposures to chemicals do not need to attend refresher training.

Chemical Specific Training
GRC personnel must know about the hazards of the specific chemicals that they work with and safe handling and use of those chemicals. Supervisors are responsible for ensuring that the employees have the proper information and a safe work environment. QSE can assist supervisors with specific chemical training.

Video Library
A library of HAZCOM related videos is available for use at the GRC Learning Center. Videos are reviewed regularly by the Learning Center and updated or expanded as needed.

Employee Training
QSE staff members who are responsible for training employees also attend training to develop and improve training skills.

Responsibilities

Environmental Management Branch
- Ensure that the training materials are current and available to all employees.
- Ensure that employees and supervisors are trained.
- Ensure training is provided to employees and supervisors.

Supervisors
- Ensure that employees are properly trained.
- Ensure that employees are trained before new chemicals are used.
- Ensure that new employees are trained before unsupervised work with hazardous chemicals.
- Ensure that employees know how to obtain an MSDS.

Employees
- Attend training as required.
- Do not work with chemicals unless aware of the hazards, personal protective equipment and apparel and proper emergency responses.
- Know how to obtain a MSDS.

Organization Development and Training Office
- Maintain training records for civil servants.

- Ensure that proper facilities are available for training classes.

Monitoring Program
This training plan shall be reviewed by QSE annually.

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CHAPTER 5 - MULTI-EMPLOYER WORKPLACE REQUIREMENTS PLAN

Purpose
The purpose of the Multi-Employer Workplace Requirements Plan is to define how NASA GRC complies with 29 CFR 1910.1200(e)(2).

Scope
The scope of the Multi-Employer Workplace Requirements Plan applies to all employers at GRC including NASA, tenant organizations, and support service contractors at Lewis Field and the Plum Brook Station.

Requirements
GRC is an employer who produces, uses, or stores hazardous chemicals in such a way that the employees of other employer(s) may be exposed (for example, employees of a construction contractor working on-site). This chapter addresses how GRC hazard communication program addresses the Multi-Employer HAZCOM requirements, specifically the following:

1. The methods that GRC will use to provide the other employer(s) on-site access to Material Safety Data Sheets (MSDSs) for each hazardous chemical the other employer(s)' employees may be exposed to while working;
2. The methods that GRC will use to inform the other employer(s) of any precautionary measures that need to be taken to protect employees during the workplace's normal operating conditions and in foreseeable emergencies; and,
3. The methods that GRC will use to inform the other employer(s) of the labeling system used in the workplace.

Program

MSDS Availability
NASA GRC makes the MSDSs of all NASA purchased chemicals available to all employees of any employer through the electronic MSDS database (http://msds.grc.nasa.gov/). Any employee can access an MSDS for a NASA chemical by searching this database. If an employee does not have computer access, paper copies will be provided upon request (see Chapter 1of this HAZCOM Program).

Precautionary Measures
NASA GRC provides instructions for employee precautions through the chapters of the following manuals:

- Environmental Programs Manual (http://smad-ext.grc.nasa.gov/emo/pub/epm/epm-manual.pdf),
- Occupational Health Programs Manual (http://smad-ext.grc.nasa.gov/emo/pub/ohpm/ohpm-manual.pdf), and
- Glenn Safety Manual (http://smad-ext.grc.nasa.gov/gso/manual/chapter_index.shtml).

Programs defined in these manuals cover items such as the Chemical Hygiene, hazardous chemical acquisition, OSHA regulated chemicals, respiratory protection, indoor air quality, use of the NASA GRC Safety Permit, Confined Space Entry, Lockout/Tagout, and others. All employees can access these manuals for information regarding precautionary measures needed for specific tasks.

Labeling System
The NASA GRC labeling system is defined in Chapter 3 of this HAZCOM Program.

Monitoring Program
This Multi-Employer Workplace Requirements Plan chapter shall be reviewed annually. The written Hazard Communication Program for other employers shall be reviewed to assure that these requirements are included. The review will be conducted upon the initial start of work at NASA GRC and annually thereafter